

# AVIATION

*The Oldest American Aeronautical Magazine*

JANUARY 10, 1927

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VOLUME  
XXII

## SPECIAL FEATURES

NUMBER  
2

GERMAN NIGHT AIR TRANSPORTATION  
PARIS HOLDS TENTH AERO EXPOSITION  
HIGHLIGHTS OF THE PARIS SHOW

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# AVIATION

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## With the Editor

Aeronautics has always been a subject with a broad international aspect and aeronautical engineers, airplane designers, and, in fact, everybody connected with aviation in this country, have a very decided interest in the progress made in aeronautical engineering abroad. France has from the earliest been among the leaders in aeronautical thought and the Paris Show, therefore, immediately becomes of international interest. The Show itself is, in fact, international although, in its 1926 version, it was decidedly national in character, for comparatively few airplanes or engines of other than French manufacture were exhibited. However, it was very characteristic of French aviation progress during the past two years, that is, since the last Aviation Salon, as it is termed, was held.

So numerous was the representation in the Show, that it has been found impossible to discuss all aspects in one issue of AVIATION. Begins figured very extensively among the exhibits and while the aircraft are fully dealt with this week, the many highly interesting engines exhibited will, next week, be described and discussed in detail.

# In 1926 WRIGHT WHIRLWIND ENGINES Flew More Than 1,750,000 MILES

## In Commercial and Private Airplanes

### Whirlwinds Have In 1926;

#### In Competition

Made first North Pole flight by Commander Richard Byrd in Fokker 5-engine plane.

Won 1st place Annual Reliability Tour of 2,570 miles in Trovick plane carrying 600 lbs. per load, average speed 125.00 m.p.h.

Won 2nd Place Annual Reliability Tour in Ford Verville Army engine, carrying 600 lbs. per load, average speed 113.00 m.p.h.

Won 3rd Place Annual Reliability Tour in General Denham, carrying 600 lbs. per load, average speed 106.7 m.p.h.

Won Transport Race for Detroit News Air Transport Trophy at Philadelphia in Wright Whirlwind carrying 1,000 lbs. fuel at 115.75 m.p.h.

Went 8,000 miles in Wright Whirlwind carrying 1,000 lbs. fuel at 115.75 m.p.h.

Won 12 out of 15 passenger competition at Philadelphia.

Won 5 First Prizes at Dayton Mid-High Air Meet in April 1926.

Made Northwest Record, Oregon to Los Angeles flight, 1,614 miles in 2 hrs. 20 min. in Ryan M-1 biplane of Pacific Air Transport.

Carried 2,000 lbs. per load at Philadelphia in 104.75 m.p.h. in the new 3-engine addition built by the Ford Motor Company.

#### In Daily Service Flown for

Philadelphia Naval Transport Company—30,000 engine miles in 8,175.75 hrs. of engine power averaging 120 m.p.h. fuel per gallon hour on about 250 cubic inches of Whirlwind.

These performances recommend to pilots  
the Wright Whirlwind, 200 H.P. Air-Cooled Engine for

SAFETY — ECONOMY — DURABILITY



That's why  
**More Pilots fly them!**

WRIGHT AERONAUTICAL CORPORATION, Teterboro, New Jersey, U. S. A.

Whirlwinds, Model 10, using 12 WHIRLWINDS exclusively in 1926.

Went 8,000 miles in Wright Whirlwind carrying 1,000 lbs. fuel at 115.75 m.p.h.

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#### The Paris Show

THE TENTH Paris International Aviation Show which closed on the 10, is a two-part affair, and therefore, it is not a little bit surprising to find that the show started the very considerable program which has been made during this period. It is, of course, unfortunate that the exhibition, while characterized as "International" in its title was not more international in scope. There were but four countries represented other than France and of these four, the progressive little state of Czechoslovakia was the only one of which it could be said that it was anything like fully represented. England, Holland, and Belgium rounded out the international scope of the show. And, in view of the meagre representation of these countries, it would hardly seem justifiable to judge the aeronautical progress made in these countries by those respective exhibits at the Paris Show.

Considering, therefore, only the French exhibits, it seems that in general, plane design the greatest progress has been made, so far as actual airplanes are concerned. One notable development in the entire new class of pursuit airplanes, known as the "Jockey," of which by one example was exhibited, namely, the Nieuport 40. In this class of plane it would appear that every consideration is subjected to speed and maneuverability. All protective equipment is omitted, then, and the plane is left unprotected, while the number of guns carried is reduced from four to two. The machine is reduced from a 2 hr. supply to 1½ hr.

There are no details available at this moment on the performance of the Jockey, except that it is a very fast plane and it would be extremely interesting to compare its flying qualities with, for example, those of the Curtiss Hawk or the new Boeing pursuit plane, and then to see whether the improvement is performance, if any, warrants the sacrifice made in other directions. Obviously the Jockey type of plane becomes an extreme weapon pure and simple. It is hoped, presumably, that the excessive speed and maneuverability expected from such a type will make the plane offensive as powerful, in spite of reduced armament, as the more standard type of pursuit airplane.

A large number of the French planes exhibited at the Grand Palais were of wooden construction, although many incorporated a considerable proportion of metal construction. Where metal construction was employed it generally involved aluminum rather than steel. A notable example of the type of revised metal construction mentioned is to be found in the Avrocan AFM 26 aircraft plane which is constructed of aluminum sheet alloy.

In the larger class of military aircraft, day and night bombers and observation airplanes were much in evidence.

And, in the majority of cases, it appears that the French transport planes for commercial aviation are other conventional day or night bombers both of the single and multi-engine type, or, at least, designs in which the influence of military requirements is very apparent. For example, the Buguet 24, a six-passenger cabin airliner, is, in reality, a modification of the well-known Buguet XIX observation and bombing plane. In its true, of course, that French has specialized considerably in commercial transport aircraft but it is not reliable at the show, that there was a striking likeness between many of the French airplanes and the American military types.

#### Giant Aircraft

IN THINKING of military or commercial aviation it has become habitual to think that an airplane is composed of its parts over \$50,000. Such a figure is the limit to which our minds run, and when it is suggested that half-a-million be spent on building a plane we immediately register a reaction that such a project is extravagant. Perhaps, however, it would be a good thing if we were to think in similar terms with the construction of giant airplanes at flying boats.

German engineers have given a considerable amount of work on the project of building an enormous flying boat for trans-Atlantic service. The wing of such a plane is to serve as the main support, housing and the weight is to be distributed throughout the span. In normal phases, the weight is concentrated toward the middle of the structure and as a result, the wings become heavier per unit with increasing span. The distributing the weight throughout the span the principal is changed from that of a cantilever bridge to that of a bridge built on piers, a type which can be extended in length indefinitely. With good engineering the strength of the structure could scarcely be figured, the only assumption being the variation of air currents on the opposite side of the wing. The problem, of interest, would be a very serious one but not insurmountable.

The question, however, has often been raised as to the real value from a commercial standpoint of giant airplanes. Many conclude that the structure weight with its gone up beyond control but under the new principle of construction already referred to this will not become a problem. Furthermore, it should be remembered that from the operating standpoint it will always be cheaper to serve, for example, one hundred passengers in a single airplane than to employ two machines of smaller size, each carrying one half the load. If this is the case, there would seem every indication of great possibilities in the new large airplane for one year the main trunk airline of the world in the future.

# German Night Air Transportation

*Berlin-Koenigsberg Night Airways Fully Lighted, Three-Engine Planes Used.*

By ERHARDT MELCH

Director of the German Luft Hansa

CLEARLY recognizing that flying at night is one of the main requirements of the future of air transport, the officials of the German Luft Hansa air services have been particularly interested in the development of night flying. In 1933 and 1935, extensive trials were carried out in a number of night routes by the German air transport companies operating at that time. These trials had shown up such excellent results that the new German air transport company, the Luft Hansa, in the beginning of 1936, started night flying service for passengers. On May 1, the night route Berlin-Bonn-Koenigsberg (over 480 miles) was opened up and carried on regularly until the beginning of the winter season, on Nov. 15. The route obtained in these night routes for passenger service during the summer was upland. A reliability and punctuality of nearly 100 per cent was achieved. Besides a large number of passengers, a considerable amount of mail, newspapers and freight were carried on this line. For the first time in Europe everybody could make use of the airplanes for traveling at night. All the passengers were thrilled by the wonderful aspect of the illuminated cities at night. They were all enchanted by the richness of human ability. Based on these good results, the system of night routes will be further extended next year. The new lines will, as in the case of the route B-H-B-K, be equipped with complete night flying illumination.

The night route has been operated with the three-engined Junkers G-24 monoplanes which, for this purpose, were equipped with all modern means of navigation. Besides the compass, every plane was supplied with a Gyrocompass and a

back and turn indicator, making it possible to keep the airplane in straight flight and to steer it with absolute safety, even on the darkest night. For orientation and landing there are powerful searchlights attached to the wings, reflecting their beams from a small projector mounted underneath the fuselage. In addition, there are three compasses fixed fast to the underside of each wing, capable of illuminating the landscape within a radius of 4,000,000 ft. to a brightness equal to daylight, in case of a landing becoming necessary in an emergency field.

## Night Flying Instruments

Local dogs are easily avoided by means of a complete wireless telephone system, S & R sets, enabling the pilot to receive weather reports and reports about his position at all times during the flight. The accurate illumination of the cockpit is only as bright as that to cause any blinding of the pilot while the passengers' cabin is perfectly illuminated by numerous electric lamps and domestics. A soft violet-blue glow from all the instruments on the dash visible for easy recognition and reading.

The night illumination of the route which a perfect orientation along the line. About every 20 miles there are landing beams, similar to those used in water navigation. In order to obtain the greatest range possible, these beams are supplied with universal parabolic glass reflectors, and in most cases they are hooked up to the high-tension power lines.

Between these landing beams, at intervals of three or four miles, are placed beam tubes, giving off as strong red

and light, thus severely testing the plane from beam to beam, even under the worst conditions of visibility. At each of the beam tubes is established an emergency landing field. The beam tubes mentioned above have day and night. In addition to these are forest of electric beams from city to some locations, where no electric current is available, leading to emergency beams.



The experimental beam tubes installed at the N.A.S. air field at Melsdorf. The beam tubes in the tower on the right and the beam tubes which give a hollow red light during the night. The beam tubes which give a hollow red light during the night. The beam tubes which give a hollow red light during the night. The beam tubes which give a hollow red light during the night.

For airplanes taking off and landing, the airports are equipped with a large variety of illuminating devices, depending upon the importance of the airport. At the first place, there

is a second class to each airport a high beam, visible from all directions. These beams generally consist of revolving searchlights which, under average conditions, at visibility, can be seen at a distance of from 60 to 75 miles. For landing the field itself, there are, in the immediate vicinity, field illumination beams, usually consisting of steady burning beam tubes.

Tempelhof Airport, Berlin, has on its two main towers two revolving beam tubes. The actual foundation of the field are indicated by a continuous line of red lights placed 100 to 200 ft. apart. The spot where the plane should touch the ground is marked out by a line of green, white and red lamps, changing in color of color with the wind direction and turning from dusk to dawn. Besides showing the wind direction, this line of lamps enables the pilot to judge his speed and height above the ground. The landing is made from green over white to red. Thus the red light is to warn and the wind blows in the direction, red, white, green. All observations over or on the field are other marked by red warning lights or brightly illuminated by searchlights.

## Vertical Lighting

The Tempelhof Airport is especially lighted by means of seven "tower" searchlights on high surrounding points. The "tower" consists of five searchlights, each of 1000 watts. They spread a very appreciable light over the whole field which is shown sufficient for making a safe landing. In addition these lights illuminate the buildings on the airport in a way that they are easily recognized from the air. By means of these "tower" lights in front of the towers is made as light as day for serving the machines. Directed only downwards, they have no blinding effect. The Tempelhof Airport is also equipped with an illuminated wind direction indicator that shows up very well from the air.

Behind all these devices—the "tower" as the line of green, white and red lamps—is reflected for landing without any other aid. In addition, as mentioned above, each plane carries complete equipment of landing lights and those of its own. In this case also, either one of the devices is sufficient for making a perfect landing.

Consequently, there is always a quadruple factor of chance in the illumination system during a landing, and the four of them working together will insure a landing as safe as that in daytime. In the question it is interesting to mention that every night landing has been carried out with perfect safety and without the slightest danger whatsoever.



Tempelhof Airport, Berlin, at night



Junkers G-24 three-engine airplane of the Berlin-Hansa night service at Tempelhof Airport.







The Lave 33 Oliver Lee, 21 twelve-passenger airplane (one Jupiter 420 hp.)

Constructively, the Levenor 77 is a single-layer truss airplane, with truss-braced and inter-connected wings of the folding type. The fuselage is of the type of construction popular to this time and has stood the test of time in the numerous carrier airplanes the Levenor Co. has supplied to the French Navy. In these machines are used 8 struts built up or plywood in continuous strips running from the engine section to the wingtips from the sides of the fuselage, while the top and bottom are formed by plywood strips, secured with viscous. This construction, which does not resist the use of any metal fitting, is very strong, light and cheap to build and to repair. The roof of the cabin is built in the shape of a hull, with a top ridge, to give additional safety in case of a bad landing. To denote the sound of the engine and also to reduce the low sound, a sheet of asbestos is mounted between the double walls of the cabin. Owing to the type of construction used, the windows are of unusually large cut and should give passengers a magnificent view of the world below without being annoyed by burning sun. The pilot's cockpit is situated right after the engine, and behind it there is a separate compartment for the radio operator.

Although the Levenor 77 has not yet flown, it is of interest to note from the aerodynamic standpoint the machine is not unlike the Levenor 483 shipboard reconnaissance three-seater which is in extensive use in the French Navy and which was also exhibited, together with the new P. 623 two-seater fighter.

#### Other French Airships

Among the other machines of French construction there were three that have just been ordered by the Air Force for its Paris-London and Paris-Marseille services, where they will gradually replace the obsolete Gohet and Eclair 36. These are the Hispan 145, the Hispan 202 and the Lave 33 Oliver 217.



The Lave 33 Oliver Lee, 21 twelve-passenger airplane (Jupiter 420 hp.). The type is used on the Atlantic-Pacific service and in the machine used by Lieutenant Blandin on his recent flight from Hong Kong to Paris in 12 airplane across central Africa.

The Hispan 145 is the two-engine version (with Jupiter) of the four-engine transport machine, two of which were in the Paris-London service last summer. The machine is similar to the Hispan 202, but the cabin, which alone was shown, has beautiful leather seats on the walls and roof, and built-in, transverse, long windows. The cabin holds 100 passengers in very narrow stateroom chairs which are placed three abreast, with a passage-way between.

#### Military Machines Concentrated

Strictly, the Lave 33 Oliver 217 is not a transport machine and may best be described as a "tailored-off" edition of the well-known Gohet, except for a doorless fuselage, which is novel. The 217 is merely a commercial adaptation of the 145 30 bomber, and carries six passengers in the forward cabin and twelve in the rear cabin. The machine has clearly been adopted by the Air Force because of its excellent single carrying ability and good performance.

The Hispan 202 is the commercial adaptation of the well known Hispan 113 observation-bomber, with the same fuselage and ground landing trussing structure and steel fuselage wing frame. The main portion of the fuselage is plywood covered.

It is noteworthy that these three machines are fitted with Jupiter engines, which share the popularity of this power plant among French airplane constructors.

Another thing that seems worthy of comment is that two out of the three new types which the Air Force has adopted for its new fleet should have metal frameworks. This is in keeping with the recently adopted policy of the company to encourage the development of all metal aircraft, which, in the words of its technical director, Dr. Henri Breguet, should be the only possible solution to the problem of degradation of commercial airplanes. He holds that even though the Gohet of the Air Force was, today, by far, the greatest machine



The Lave 33 Oliver Lee, 21 twelve-passenger airplane (one Jupiter 420 hp.)

of hours (100 hr. without top overhaul) as against 300 in 1925) then some of the German all-metal machines which were 400-500 hr. before, later to be dropped at their metal covering and overhaul, this against safety is much due to lack of extended experience with this type of construction and not to any inherent defect of metal cover.

It will be interesting to note in this respect the delivery of the French Air Force which are ordering the Hispan 145-Delmas service in conjunction with the Hispan 113-Delmas, the latter being Hispan 113-Delmas while the Hispan 145-Delmas was 113-Delmas and 113-Delmas service.

The 113-Delmas with the ground-down 300 hp. Hispan engine, was exhibited on the French stand. This is a mixed wing monoplane of the steel beam type. Its construction is very conventional, but its performance is somewhat good, which the machine may fly with eight passengers and a pilot with three-113-Delmas engine (300 hp.) at a cruising speed of 150 km. p. hr., while covering 100 hr. for the hours.

#### A Three-Engine Airplane

The 3-113-Delmas exhibited the structure of the trussing and the center section of its new transport machine, type 113-Delmas is a machine monoplane fitted with three 300 hp. Hispan 113-Delmas in place of the nose and two in the wing and is designed to carry three passengers at a cruising speed (1700 ft. per hr.) of 150 km. p. hr. for a distance of 1200 km. The machine will be built of steel and aluminum tubes assembled in steel tubing of the type by some of the best of the world, the trussing being in metal by joined steel frames which have a built-in metal structure for the passengers, though it is not sure that it is better to be covered, the metal is not so sure, but have to accommodate them in comfort.

The main section of the machine is, however, built of aluminum tubing. Instead of a built-in wing structure there is a

central box girder of large proportions, which is flamed by six engine space situated along the wing sections and the necessary bracing members. The wing engine are arranged through this box girder.

Last, but not least, there remains to be mentioned the Hispan 113-Delmas (three 300 hp. Hispan 113-Delmas) transport airplane. As this machine is almost identical with the Hispan 113-Delmas "Jupiter" of Polar form, it seems unnecessary to go into details about it. The Hispan 113-Delmas is a single-engine machine (the only one in the show, by the way, for the Hispan 113-Delmas, not the Hispan 113-Delmas) technical developments fully appear of solid steel tubing, while the wings are of timber and plywood. The machine is a very comfortable and beautifully finished job.

#### Transport Airplanes

While France has, during the past few years, made a large number of rather costly efforts to develop a really efficient big transport airplane for the proposed trans-Mediterranean services, it is generally admitted that, so far, these efforts have not produced any tangible result. The failure seemed to justify the outlook.

The large Hispan 113-Delmas flying boat with five Jupiter engines (described in Aviation, at Dec. 13, 1935—24) was only superseded by a passenger, as mentioned before, and that did not contain anything startling were the very large one. Neither could any, but a general idea of the Hispan 113-Delmas (three 300 hp. Hispan 113-Delmas) and the Hispan 113-Delmas (three 300 hp. Hispan 113-Delmas) flying boats which looked first and second, respectively in the last Singapore Transport Competition, for only two of these of these machines were shown. However, it appears from reports that the Hispan 113-Delmas, with which no successful air mail service is being run between Marseille and Algiers in the Balkan line, is getting quite overrated.

The Hispan 113-Delmas is a transport flying boat, fitted with three Jupiter engines, which is intended for trans-Mediterranean



A front view of the Lave 33 Oliver Lee, 21 twelve-passenger airplane (one Jupiter 420 hp.)





Among the foreign contestants there was the Kiashiro convertible mono-biplane (420 hp. Jupiter), chiefly remarkable for its gas turbine which may be actuated at high speed by pulling on the propeller of the *Arconautica* motor station, that is, by winding up a flywheel. It is claimed that in this way the turbine may be quickly started at any wind speed and that it can make a full turn in two seconds.

The Polish company exhibited the Paker O V, convertible two-seater, which may be fitted with two different sets of wings, one for fighting, gas spotting and photographic work, and the other for distant reconnaissance and bombing. The machine follows the most-known principles of Paker construction.

The Avia RH-26 two-seat fighter (Jupiter) is a tandem-engine biplane of cellulose base for which a very good performance is stated.

The Armstrong Whitworth Ajax (365 hp. Jupiter) is a machine of conventional, but pleasing lines, with a streamlined steel fuselage (thine covered) and wooden wings. Its performance is very good.

#### British Reconnaissance Airplanes

Consistent with the appearance of two-seat fighters, as distinct from the well-known class of A-2 single observation machines, it would seem areas as if the latter were about to stretch out and evolve into what are come to be called, around the globe reconnaissance airplanes.

The two great French specialists of A-2 (single observation) airplanes, Bréguet and Potez, both exhibit their two-seater machines with which France takes up the year's outstanding series of new world single-engine distance records, flying from Paris either in the direction of the Persian Gulf or of Siberia. For these flights, the machines were entirely stripped of all military gear so as to have even possible access of problems. However, it should not be thought that these machines are trivial which cannot be used for military purposes. The remarkable thing about these record flights is precisely that they were carried out with standard observation machines which had only undercarriage and motor modifications, such as the fitting of additional tanks, the shifting of the aim, the effect of the upper wing control and the use of slightly enlarged tail surfaces.

The Breguet XIX, a two-seater, was recorded describing a circle, but it will be of interest to note the weight schedule of the machine, exhibited at the Salon, on which Louiseno Coste and Captain Dumas made the last World record by flying from Paris to Iraq (Persia), covering a distance of 5,500 km. in 22 hr.:

Stations occupied	2,115 kg.
Weight of crew, fuel and supplies	310 kg.
Weight of machine and engine	8,700 kg.
Weight of oil	250 kg.

#### Weight total

11,375 kg.
------------

The machine exhibited at the Salon and only made the Paris-Iraq flight, but also was flown from Paris to Omdurman (Sudan) by Captain Grier and Lieutenant Bonville (4,700 km. in 27 hr.) and was used in the attempt at the World record by Coste and de Valentin when they flew from Paris

to Assuan (Egypt). Altogether, the machine has covered more than 10,000 km. (the length of the Equator) without requiring any repair or change of the engine, a 500 hp. Hispano engine.

The opposite member of the Breguet XIX G.E. is the Potez 25 G.E. (500 hp. Bessie) with which the Armistice machine flew from Paris to Iraq (Iraq), covering 5,500 km. in 26 hr. 30 min. A comparison of the two machines is not very satisfactory as they neither possess the same wing area, nor weight or engine power. Here is the weight schedule of the record-breaking Potez 25 G.E.:

Weight crew	1,000 kg.
Weight of fuel and supplies	1,500 kg.
Weight of oil	250 kg.
Weight of fuel (total) and engine	4,000 kg.

#### Weight total

The Potez machine, whether 25 A.E., 25 G.E. or 26 G.E., all have similar frames, being covered wings with inter-plate struts. The undercarriage is of three main spindles, with rubber disc shock absorbers, a type of undercarriage which, undoubtedly, has continued to be used. The fuselage is built up of four wooden longitudinal and struts, the central portion being pivoted forward, while the rear portion is secured with struts. The front portion of the fuselage may be attached any of two types of standard engine mountings, made of pressed sheet aluminum, one of which holds radial engines and the other either V or W types from 400 to 500 hp. A third member of the general reconnaissance type was exhibited by the Caudron concept which is better known for its touring and touring airplanes. The Caudron 394 G.E. was fitted with a Jupiter engine. It is of standard tractor construction.

Further, manufacturers were not represented in this class, but aviation should be made here of the regular two-seat observation machines exhibited by the Aero Co. and by the Military Aircraft Factory of France (Commissariat). The latter's machines are now called "Lafayette" whereas up to now they were generally referred to, from the name of their chief designer, as "Moths". The 8-14 (105 hp. Lorraine) has a steel tube fuselage and duralumin-framed wings, both being covered with dural. Its performance is distinctly good. This machine and other similar designs were described in the No. 29, 1936 issue of *Aviation—The A-1*.

The Aero Co. exhibited its Avion A-1 (148 hp. Potez) and A-2 (150 hp. Lorraine), which were described in our biplane with steel tube fuselage and wooden framed wings. The A-1 has a remarkably low performance for its low horsepower. No performance figures are available for the A-2.

#### Night Fighters

The French of night fighters was also represented by these machines or portions of them: (1) the Potez P 105, with two 500 hp. Hispano engines, which is the latest version of the *Châca* (night); (2) the Bessie in Bessie (Potez) with two Jupiter engines, which looks as if its designer had started to copy the Brewster-Bufford and thus decided to limit the curved shaped portion of the fuselage to the depth of the wings; and, (3), the 8-10 G.E. Avion 139, with

(Continued on Page 57)

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The Messerschmitt 109 & 112 (Messerschmitt 109 hp) advance landing phase. Note the Red nose propeller.



The Morane-Saulnier 132 biplane training and touring monoplane (shown 120 hp). The wing is swept back with rounded tips.

550 hp. Renault engine, which is a single big cylinder of very considerable proportions and metal construction of the type described in connection with the S.R.C.M. Transport, except that the wings have dihedralism bent up.

The type of biplane D.R.10 is also built of metal, steel tubing being used for the wing spars and the wing struts, dihedralism taking for the fuselage and landing struts, and channel section sheet aluminum for the ribs.

#### Naval Seaplanes and Marine Airplanes

Of the naval airplanes exhibited, perhaps the most interesting was the C.A.S.A. 31A (450 hp. Leveaux) float sports amphibian, a single bay flying boat of class four which looks capable of serious work with the fleet. It carries a crew of three. The machine is of classical wooden construction, with folding wings for rapid storage on board merchant craft. Speaking of the latter, the French Navy Department exhibited a well made scale model of the new French aircraft carrier "Borea," new searing completion, with various types of aerial aircraft, amphibious flying boats and "marine airplanes" take her off from, or landing on, the ship's platform. The C.A.S.A. 31A was, incidentally, exhibited on the French Navy Department's stand, as was a Bureau Gustave Verney plane and a Thomas M.2.35 (125 hp. Scherer) submarine boat. The latter, at the same industry, is a folding wing machine for use on board submarines and is constructed of the Duralul

material of this type with which the U.S. Navy Department experimented some years ago.

The Belgian company showed one of its type XIX two-motors mounted on floats for naval reconnaissance work. As a machine fitted with the same type of two floats was built by the Nakajima Co., Belgium's Japanese branch, a couple of years ago, and the floats fundamentally differ from the most French floats which are against box floats, it may be presumed that the design of these floats may have developed perhaps coming there from the United States. In fact, the floats, built of sheet aluminum with a central hinged keel, to which floats are attached as roller skis, others (Japan) U.S. Navy, runs with their curved deck, the deep Yee and their good length.

Aside from metal seaplanes, there were exhibited at the Salon two "marine airplanes" which are the type of craft used in the French Navy for fast fighting and fast reconnaissance. These are really land seaplanes fitted with a fuselage built watertight along its nose and lower portion and equipped with a droppable or movable undercarriage, so that the machine will not turn over on skidding in the sea, but will float until picked up and hoisted on board. As a rule, the lower wings swing by floats and the propeller also is located in a horizontal position.

Two examples of the general class were shown, a Leveaux P.L.A. 423 three-center craft reconnaissance light, and

a Vickers II two-center fighter, both with the 450 hp. Leveaux engine. The P.L.A. followed the Leveaux type of fuselage construction and, as this machine has extremely been used by the French Navy and as amphibians have been made replacing the water-tightness of its fuselage, it must be presumed that the plywood glider used up were also in contact with sea water.

#### Touring and Training Planes

A word now remains to be said of the varied types of touring and training airplanes which a basement described as distinct scope for the development of aerial locomotion.

The three principal categories of this class, Morane-Saulnier, Hanriot and Gourdou, all exhibited, and so did two of the Czechoslovakian firms, Avia and Letov.

Morane-Saulnier, besides showing its well-known primary and advanced training types, exhibited the model 115 (120 hp. Scherer) touring plane or sleek Western Officer's Car and Engineer Hanriot made, but Sprung, a pleasant personality tour of all the countries including the Mediterranean Sea. The machine is of timber construction, except for the wing spars which are duralumin tubes, and the undercarriage struts which are steel tubes. The engine mounting is quickly detachable and is built of duralumin tubing. The Morane 115 has the reputation of being extremely easy to fly.

#### Other Exhibits

Among the other exhibits, may be mentioned the 180 hp. Hispano-Suiza submarine plane produced by the Hanriot and Letov-Gourdou-Leveaux firms, which accommodates one motorboat crew, the Avia 315 II (90 hp. Vickers) two-motors, famous for its numerous triumphs in light-air competition; the Letov 815, fitted with the same engine and which looks beautiful; and the Gourdou C-108 touring-training plane fitted with the new 68 hp. air-cooled Gnome engine.

These striking notes of the 18th Paris Aero Show would be incomplete without mention of the beautiful decoration of the Grand Palais which amounted to creating an atmosphere of warmth and good cheer which an examination of the thermometer would not have justified. M. André Gossard, commander-in-chief of the Salon, was, in previous years, the strictest responsible for the decoration, both of the building as well as of the stands, which were of a uniform character. To him, as well as to M. Louis Belgrand, president of Chamber Syndicale des Industriels Aérostatiques, which represents the Salon, goes the fullest credit of this great show which was certainly one of the most successful held in the far

#### Aircraft Exports

During the month of October, the exports of aircraft and engines from the United States, according to figures issued by the Department of Commerce, Bureau of Foreign and Domestic Commerce, were as follows:

Countries	Aircraft Exported	Engines and other Aircraft	Value, Export Price Dollars
France	11	1	1,800
Great Britain	1	1	6,015
Canada	2	1	2,075
Netherlands	1	1	11
Argentina	1	0	30,775
Peru	1	1	1,000
Philippines	1	1	100
Australia	1	1	1,000
Belgium	1	1	1,000
U. S. Africa	1	1	1,000
Total	26	5	33,200



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A group of four Curtiss F.3.A. 31s four passenger amphibian flying boats (550 hp. Pratt & Whitney engines)







in the city. It is expected that Miss D. West, parade queen, who delighted the crowds during the V-JC season, will return in the flying and continue to give Sunday exhibitions throughout next flying and parade season.

#### Springfield, Ill.

By Samuel B. Howie

Springfield's new road field was inaugurated last April, with the opening of the new mail service between this city and Chicago, by the Robertson Aircraft Corporation, of St. Louis, Mo. In addition to assuring a suitable field were necessitated through the efforts of Postmaster William Condit, the local Chamber of Commerce and Leslie Smith, Springfield's postmaster. The field has been named Condit Field, for William Condit. It is located four miles from the postoffice, in a Northwestern direction. In spite of the heavy rains and floods that have visited Springfield during the past year, the field has been available at all times. Originally consisting of forty acres, it has been extended with its own complete runway-taxiway, with a lower bottom light fifty three feet high. This is the first unit in a complete lighting system, which is now being installed.

Another pilot was added to the personnel last December, when Earl Smith joined the force. He is an addition to "Les". Earl owns an OX50 Standard and is rated on July 11, 1935, at Brookline, Ill. Earl Smith grew his first hair was unable to take him, on account of business requiring his attention in another part of the country. Road this year to Brookline, where Earl Myers is located, and finished under Earl's tutelage. Earl maintains two planes at Brookline, an OX50 7-1000 and a Brewster-Buffard Standard, and is a red pilot, having hundreds of hours to his credit, with no accidents of any nature, since Les Smith asked him several years ago.

Earl Smith has developed into a very good and careful pilot and has flown about 150 hours since he joined. He and Samuel Howie recently flew to St. Louis and immediately

passed the F.A.I. examination.

Passenger carrying has been good this year, considering the extremely weather period.

#### Denver, Colo.

By Mr. J. McHenry

Seven March revolving electric beams, from 3,000,000 to 7,000,000 candlepower each, will be mounted on fifty foot towers and placed at intervals on the 204-mile stretch of the air and route from Cheyenne to Denver in January. In addition, at 3-mile intervals, beacons will be placed, starting operations each night at sundown.

One revolving beacon light is already in operation at Lowry Field, Denver and boundary lights have been placed around the forty-acre plot.

Alexander Airport is leading with activity. The new hangar is being added to be two like units. A gas pump has been installed and the airfield is now being used for student instruction as during their last to keep dry.

A. G. Murray, a new student at the Alexander Training School, school in four and one-half hours and earned his first flying by the immediate purchase of an Eaglehawk.

A. Van Delft, Jr., vice-president of the A. G. D. Directory Company, made the trip from St. Louis to Denver this week to take delivery of his Eaglehawk. The plane will be used for close contact with the various branches of his business in as many different cities.

#### Manistee, Mich.

The field, which was recently purchased by the city, during 1937 will be partially developed under the direction of the City Commission. It is planned to level and mark the field and the section of a two-plane hangar is at present under consideration.

Obviously close to back of the project expect to have a field fully equipped to care for visiting planes, with gasoline, oil and repair facilities.

## The CURTISS "HAWK" SERIES



CURTIS P-13 "HAWK" STANDARD ARMY TYPE. CURTIS D-12 MOTOR.



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CURTIS AT-8 "HAWK" PURSUIT TRAINING "J-5" MOTOR (OR WHICHT J-5 MOTOR).



CURTIS P-13 "HAWK" NAVY LANDPLANE. PRATT & WHITNEY WASP MOTOR.

It is a universally accepted fact that the Curtiss D-12 motored "Hawk" of the Army P-13 type, is just about the finest pursuit machine in service today.

It may not be so universally known that the "Hawk" type is basically adaptable to various power-plant installations, without impairing in the least its characteristic excellence of performance and serviceability.

Above are shown four types of the "Hawk" each developed to meet a peculiar requirement of Army and Navy pursuit operations.

Each fulfills its function so satisfactorily that production orders for all types shown above are now being executed.

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### Buizer, Maine

The Buizer Airport, operated by the Maine Aerial Service, Inc., is located on the Litchfield Highway, two miles West of Bangor. The field is sandy gravel in some, one mile long and 800 ft wide. It has a 800 ft gravel runway, running Northwest and Southeast, 200 ft. East of the runway. There is a wind cone installed on a telegraph pole 100 ft. East of the runway.

At present all hangar space is taken, but in the Spring the company expects to build a large hangar. There is provision, oil and equipment for servicing planes on the field at all times.

### Ryan Airlines Meets Emergency

As accidents, ten miles South of Zanesville, across the Mexican line, obstructed transportation recently to such an extent that the Steamship Agency, in order to meet the demands of its patrons, resumed the services of the Ryan Airlines for the delivery of beer.

Three planes flew immediately to the brewery and started work. It is estimated that it will be three months before the damage is fully repaired, during which time the three planes will carry only barrels of beer each day from the brewery to Zanesville, making between eight and ten trips daily.



### Work on Wright Field Progresses

The Department of War has just announced that improvements on Wright Field, Dayton, Ohio, which will replace McCook Field as the Army air base, are well under way, as a result of the appropriations totaling \$1,000,000.

The engineering division of the War Corps is now located at McCook Field, but will vacate this temporary by July 1, 1927, so that it may be turned over to the owners from whom it was leased.

A two-story and basement reinforced concrete administration building, 56 ft. by 34 ft., and a modern one-story, one-bay building, 482 ft. by 302 ft., are well under construction on the property which the City of Dayton has donated to the Government for the establishment of the new field. A warehouse, a shop building, a wind tunnel, a propeller testing place, and a generator house have been designed and construction has started.

In addition to these, it is necessary to provide reinforced sidings, roads, water, a drain and electrical distribution system, storm and sanitary sewers. The grading structures will be provided during the year, or as funds become available.

### Air Corps Reserve Officers' Enrollments

During the first semester of the school year, 1925-1927, there were 1,271 enrollments in the areas made of the Air Corps Reserve Officers' Training Corps at educational institutions. Of these 801 were enrolled for the basic course and 207 for the advanced course.

### Proposal for Special Type Observation Airplane

Office of the Chief of Staff, McCook Field, Dayton, Ohio (aerial property) will be received here and 10-28-26. April 4, 1927 for the development of a special type observation airplane and furnishing proposed airplane in quantities at use, two or three of Government's opinion for test, with option to place additional orders for ten specimens of test of number number to warrant. Further information on application.

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### Navy Gives Places to Coast Guard

The Navy Department turned over the last of the planes allotted to the Coast Guard when the Coast Guard "E", a seaplane, was given a final flight and put into commission at the Buickway Point air station. This plane, a Vought U-1A with Wright Whirlwind engine, will be used to cover along the coast and to observe the activities of Blue Heron.

Seaplane places have been furnished to the Coast Guard stations at Olaneth, New, and Cape May, N. J.

### Paler Plane to be Placed in Museum

On Dec. 22 General Richard B. Byrd and Floyd Bennett flew the *Judy* Ford Fokker monoplane of North Pole fame to the Ford Airport at Dearborn, Mich., where it will remain until a convenient season, in which it will be a permanent exhibit, is built.

An exact of plane and the *Amelia* plane at Tokyo. When a final landing, the plane traveled it was the first longer. Mrs. Bennett accompanied by husband on the trip.

### Battle Fleet Activities

A detachment of nine officers and thirty-five men from U. S. *Reynolds* One with four seaplane planes based at San Pedro for towing to the battleship's anti-aircraft practice, routine to show their worth and their performance is considered to be very satisfactory.

Anti-aircraft practice has been engaged in by *VO Reynolds* One and *VO* planes now occupied in training with these practices. Although some difficulty was experienced earlier in the morning, the seaplane planes when operating were very satisfactory.

After noon has been devoted to by *VO Reynolds* Two in individual landing practice. This practice is something new for the observation squadron and the pilots are practically all new to it. They have been required and encouraged to make any suggestions as to the work in hand and

both *VO Reynolds* One and *VO Reynolds* Two are co-operating in preparing for the practice.

The Commanding Officer reports that the striding school delivered by *VO Reynolds* Two during the last maneuvers was noted in accordance with instructions, and was heretofore considered.

### Navy Aviation Course at San Diego

Thirty-two cadets from the Battle Fleet, Comdr. T. H. Atford, A. D. Berland and a Reserve seaman from Seattle, Wash., attending Class First, students of the Navy Training Station, San Diego on Dec. 4.

In a report to the department on the station activities concerning the condition of planes and material, admitting students are given a review of the condition of the *VO* seaplanes used for dual instruction which have just had top overhaul and are being used by the new class. The report also shows an existing condition of equipment.

Several of the planes have had 500 hours flying and one plane has flown over one hundred hours with a large light in the propeller through which a class could be passed. Wood is the bottom of the fuselage is rotten and on account of the war and of the positions drop off in going off the beach. However, the report says, "As there are no spare propellers and no spare fuselages, and the *Assembly* and *Engine* Department is worried in the front overhauling *VO* seaplanes, the old planes are being flown as long as possible."

Another interesting feature of the report concerns the material, which after being 500 hours, was badly in need of major overhaul which it is now undergoing. It is expected to be ready by the first of the year when a class of pilots will start aircraft instruction.

The Commanding Officer, Battle Fleet, Admiral R. H. Jackson, arrived on Dec. 1 by airplane, and made an official inspection of the station activities by the Commanding Officer.

(Continued on Page 102)

## The Loening Amphibian

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**FOR SALE:** Jerry in excellent condition. Thorough overhaul last year including engine and rebuilding of all woodwork, cleaning and repainting of all fittings, cleaning and testing to a safety factor of one of all times, and complete new factory master job. Price \$950.00 at Philadelphia. Box 538 Aviation.

**FOR SALE:** Standard J1, newly overhauled and renewed, fuelways widened to seat two passengers in front seat. Price at Philadelphia, with newly overhauled O.S. motor, \$950.00, or less motor, \$650.00. Box 539 Aviation.

**FOR SALE:** Two Waco Winn, excellent condition. One has flown 300 hours, other 300. Both have been housed in hangars and are less than eight months old. Motors newly overhauled at factory. Price at Philadelphia, \$2,500.00 and \$1,200.00, respectively. Box 540 Aviation.

De Poot's Nivette design, 1/2 hp, powered \$1.50 price. Mapping system and enlarger \$150.00. O.S. motor, used, a biplane, \$150.00. William K. Loop. 225 Broadway, Lauder, Ohio.

New O.S. motor \$295. Dual seat as low as \$95. Model A Blum, new, \$600, slightly used, \$450. 250 hp. These \$255 to \$350. Karl Ort, York, Penna.

**FOR SALE:** In new condition, Luscombe A-3, 28 hp motor, complete with propeller two 20 x 3 wheels, fuel tank and fuel pump and a quantity of spare parts, engine, radio and controls, for biplane. \$900.00 for the lot if taken soon. Frank Schreiber, Madison, Ohio.

**WANTED:** \$1,000 to \$5,000 to help finance the construction of an experimental two-seater Sport plane, from the design of an experienced aeronautical engineer. Our construction warrants your consideration. If you are financially interested in successful aviation. Box 541 Aviation.

**FOR SALE:** Luscombe Standard, 150 Hispania motor, complete, ready to fly, perfect condition, 280 wheels, Hartzell propeller. Extra 1500 miles complete. Extra set wings, second, perfect condition, wire, steel, tail section included. Will deliver any 500 miles for expense. Price spare. The whole works for \$1,000. Mann Flying Service, 1312 West Broadway, Spokane, Wash.

**FOR SALE:** One new 120 hp Le Rhon motor, with plenty of spares, at your own price. Make offer. M. W. Post, Dublin, Iowa.

**Wanted:** 3 cylinder Anzani or Leveaux motor, new or used. State full particulars. Alvin S. Peters 1816 N. E. 3rd Avenue, Miami, Florida.

Will trade 150 acres of Arkansas land, along White River, good farm, for airplane. Also have equity in house at Omaha, Neb. for airplane. Fred Kelley, Route 1, Benson, Neb.

**FOR SALE:** Waco nine, with steel fuselage and one fixed leg, used very little. Plane in perfect condition. Will deliver for expense. Box 542 Aviation.

**BOUGHT:** VEE-T with 150 horse power B-Ham motor, good condition, will sacrifice for immediate sale. Indianapolis Aviation Company, Indianapolis, Indiana.

**WANTED:** Used Waco, Standard or ship of this type. Will pay cash and act quickly, if price is cheap. Box 543 Aviation.

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Phoebus, 48	5.75	5.50	5.25	5.00	4.75	4.50	4.25	4.00	3.75	3.50	3.25	3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	75c	50c	25c
Phoebus, 48	5.75	5.50	5.25	5.00	4.75	4.50	4.25	4.00	3.75	3.50	3.25	3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	75c	50c	25c

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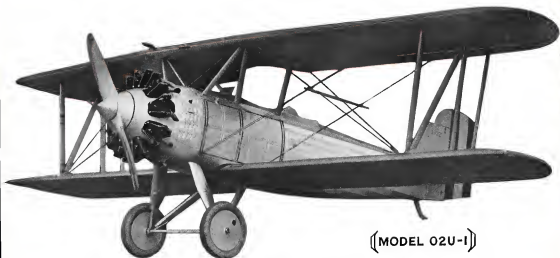
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